



# Link2Feed

Open Source in Business



# Open Source in Business

Len Payne

Chief Technology Officer

Link2Feed



- Introduction
- What is Open Source?
  - Brief History
- License Types
  - Permissive vs Restrictive
- Integrating External Projects
  - Don't reinvent the wheel
- Sharing Internal Projects
  - Hey, look at this new wheel!
- Contributing to Open Source
  - Changing someone else's wheel
- Q&A and Conclusion

# The Link2Feed Story

- Began in 2010 with WEFBA as a side-project at Innivity Marketing in Sarnia
- Incorporated as a private, B Corp certified social enterprise in 2013
  - Secured Province-Wide Contract with OAFB
- Expanded to the United States in 2015, and the UK in 2018
- Now helping over 6,000 agencies provide over 3 million clients with the help they need in over 50 million relief transactions



# What is Open Source?

## Open Source Software

- Access to Source Code
- Changes Come from Users
- Examples:
  - Android, Firefox, Linux
  - And a billion things only developers hear about

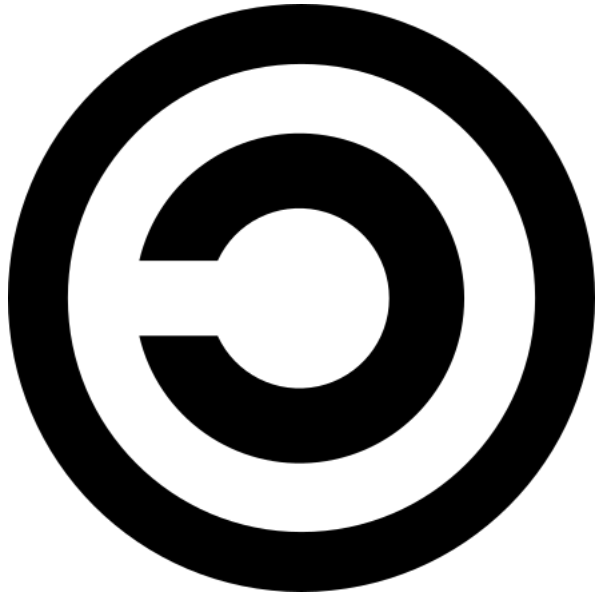
## Closed Source Software

- No Public Access to Code
- Changes Come from Owner
- Examples
  - Windows, MSOffice, Photoshop
  - And most apps for your phone

# Types of Open Source Licenses

- **Permissive**
  - Very few requirements. Gives free ability to modify/change.
  - Examples: MIT, BSD, Apache, Unlicense, WTFPL, Public Domain
- **Restrictive**
  - Adds “Copyleft” restrictions that vary based on individual licenses.
  - Examples: GPL, LGPL, AGPL, MPL, Ruby, and others
- <https://choosealicense.com>

# “Copyleft”



- Licenses under protective and reciprocal policies.
  - “I shared my work, you share yours too.”
- Benefits to Business
  - Share-and-share-alike. Everyone benefits.
- Risks to Business
  - The very reciprocal licenses require sharing of proprietary/closed code that is linked.

# Quick Quiz

- What benefit does a company gain from open source use in general? Why not just write everything in-house?
- What is the biggest risk of a business for using software licensed under a reciprocal open source license?

# Open Source in Business

- Every business is different. There is only one:
  - [Red Hat](#)
  - [Facebook](#)
  - [Redis](#)
- Each of these has unique constraints on how open source has affected their business.





# Red Hat – Relying on Reciprocal

- "The Open Source Company"

- Recently purchased by IBM.
- Operated >20 years, over \$1b revenue/yr
- All of their IP is open source.



- So what are they selling, to get that \$1b?

- Services. Support. Stable enterprise solutions.

- Many Red Hat technologies are licensed using restrictive licenses, like the GPL, to require share-and-share-alike.

# Facebook – Profiting from Permissive



- Facebook v1 was built on the LAMP Stack to save time and money when rushing to market.
- Since day 1, the team has contributed back to support the tech that they rely on.
- Recently, Facebook has shared and licensed internal tools, like React and GraphQL. Their popularity has helped Facebook in turn.
- Facebook prefers the MIT license, a very permissive license.
  - A more restrictive license may require Facebook to share their secrets.

# Redis – Open Source for the Little Guy

- Redis is a key-value store and fast cache.
- It has been licensed under BSD 3-Clause since day one.
- The team launched Redis Labs to provide extra paid features.
- Big companies undercut Redis Labs to deliver their own product.
- Redis Labs had to change the license of their products to be more restrictive. Twice. Still, they struggle to compete.



# Open Source in Business

- Based on these three stories:
  - What benefits do these businesses see from open sourcing their software?
  - What downsides do they see?
  - What concerns do all companies have, even big ones like Facebook?
- Quick Q&A before Demonstration



NOTE: I will be doing a quick demo with Node.

# Contributing to Open Source

- Get involved. It doesn't have to be huge.
- Watch out for #hacktoberfest
- Listen to The Changelog: <https://changelog.com>
- Watch for accidentally triggering reciprocal license clauses.

# A Quick Example

- We're going to build a basic "Hello World" API.
- And then we're going to "accidentally" make it non-compliant.
- And discuss the tools we can use to identify these situations.

# Setup the Environment

- Open a Terminal/Command Prompt (these are \*NIX instructions, but can be adapted for Windows). Perform the following:

```
mkdir CUCSC-OSS
```

```
cd CUCSC-OSS
```

```
npm init
```

```
npm install express
```

- Then use an editor to open a file called “**index.js**” inside this folder.
- When you want to run this file later, you will execute “**node index.js**”

# Hello World! (Put this in index.js)

```
const express = require('express');  
const app = express();  
const port = 3000;  
  
app.get('/', (req, res) => res.send('Hello World!'));  
  
app.listen(port, () => console.log('Example app  
listening on port ${port}!'));
```

Run `node index.js`  
Go to `http://localhost:3000`



# License Checker

- In projects that use package managers (eg- **npm**), licenses can be discovered by automated tools. This is just one of many.

- <https://github.com/davglass/license-checker>

- At a terminal for your project run:

```
npm install -g license-checker  
license-checker
```

# Let's Make it Cool! (Or Hot?)

- We're going to add a little third party tool to grab some weather details. This is going to seem like a relatively easy, small change, so let's follow along.
- At your terminal, run:  
**`npm install weather-man`**

# Updating the Code to Use WeatherMan

```
const express = require('express')
const app = express()
const port = 3000
```

This is just so I don't publish my actual API Key on the screen...

```
const api = require('./apikey');
const WeatherMan = require('weather-man');
const wm = new WeatherMan('openweathermap', api.apikey);
```

Setup the WeatherMan API

```
app.get('/', (req, res) => {
  wm.getCurrent(42.305209, -83.064645).then(function (result) {
    temp = result.getTemperature(WeatherMan.CELCIUS);
    res.send('Temperature is ' + temp + ' Celsius');
  });
});
```

Get Results for UWindsor's Latitude and Longitude

Drop the Temperature Instead of Hello World!

```
app.listen(port, () => console.log(`Example app listening on port ${port}!`))
```

# Checking the Licenses Again

- Drop down to a terminal and run this again:

**license-checker**

- What do you notice? What license does weather-man use?
- What other things did we add?
  
- What does this mean about our project?

# Thank You

- Open Question/Answer Period
- Contact Me:
  - CUCSC Slack: @Len Payne
  - E-Mail: [lpayne@link2feed.com](mailto:lpayne@link2feed.com)
  - L2F Website: <https://www.link2feed.com>
  - My Website: <https://www.lenpayne.ca>
  - Sarnia Tech: <https://www.sarniatech.ca>



# Handy Links

- <https://opensource.org>
- <https://www.redhat.com/en/about/open-source>
- <https://opensource.facebook.com>
- <https://opensource.microsoft.com>
- <https://choosealicense.com>
- <https://hacktoberfest.digitalocean.com>
- <https://github.com/MunGell/awesome-for-beginners>
- <https://changelog.com>